

WHAT I CLAIM AS MY INVENTION IS:

1. A pressure box for thermoforming a heated sheet of thermoforming material against a mold, the pressure box comprising:

a top plate, side and end plates extending downwardly below the top plate, the top plate and the side and end plates defining a pressure chamber open at the bottom of the pressure box, and a resilient circumferential seal on the bottom of the pressure box, the seal extending around the pressure chamber to form a seal when the pressure box is pressed against a heated sheet for thermoforming the sheet;

at least one of the said side and end plates comprising a pair of walls defining an essentially uniform width slot open at the lower end of such plate, the slot extending along the length of such plate;

a resilient sealing member in the slot, the sealing member extending downwardly below the lower end of such plate to a bottom surface below the lower end of such plate, the end surface forming a portion of the seal, the sealing member comprising a plurality of holes; and

a first connection retaining the sealing member in the slot, the first connection comprising retaining members extending from one or both of the walls into the slot, the retaining members extending through the holes in the sealing member to engage the sealing member and resist movement of the sealing member out of the slot.

2. The pressure box of claim 1 wherein the sealing member comprises a pair of outer surfaces facing the walls of the slot, the outer surfaces separated by the thickness of the sealing member; and

the thickness of the sealing member when unstressed is less than the width of the slot whereby the sealing member has a clearance fit between the walls of the slot when the pressure box is not pressed against the mold.

3. The pressure box of claim 2 wherein the outer surfaces of the sealing member contact the walls of the slot when the pressure box is pressed against the mold to seal the heated sheet.

4. The pressure box of claim 1 wherein the retaining members are spaced along the length of the slot.

5. The pressure box of claim 4 wherein the said at least one plate comprises first and second plate members and the pressure box further comprises a second connection joining the first and second plate members, the second connection comprising fasteners extending through bores in the retaining members.

6. The pressure box of claim 1 wherein the retaining members are spaced along a vertical axis.

7. The pressure box of claim 6 comprising a second connection attaching the said at least one plate to another of said side and end plates, the second connection comprising a plurality of fasteners joining the one plate and the other plate, the fasteners extending through bores in the retaining members.

8. The pressure box of claim 1 wherein each wall is on a respective lower end portion of the said at least one plate, each end portion having a bottom surface on the lower end of such plate, at least a portion of each bottom surface having a three-dimensional shape to conform with a corresponding three-dimensional shape of the mold.

9. The pressure box of claim 8 wherein the end surface of the sealing member comprises a three-dimensionally shaped portion disposed between the three-dimensionally shaped portions of the plate bottom surfaces.

10. The pressure box of claim 9 wherein the three-dimensional portion of the end surface of the sealing member is about 0.020 inches below the plate bottom surfaces.

11. The pressure box of claim 8 wherein the said at least one plate is transverse to an indexing axis and the three-dimensionally shaped portion of at least one of the plate bottom surfaces and the sealing member end surface is configured to conform with one or more male or female portions of the mold extending along an axis not parallel with the indexing axis.

12. The pressure box of claim 1 wherein the sealing member is a flat sheet of elastomeric material.

13. A pressure box for thermoforming a heated sheet of thermoforming material against a mold, the pressure box comprising:

a top plate, side and end plates extending downwardly below the top plate, the top plate and the side and end plates defining a pressure chamber open at the bottom of the pressure box, and a

resilient circumferential seal on the bottom of the pressure box, the seal extending around the pressure chamber to form a seal when the pressure box is pressed against a heated sheet for thermoforming the sheet;

at least one of the said plates comprising first and second plate members, each plate member comprising a wall, the walls of the plate members facing each other and defining an essentially uniform width slot open at the lower end of such plate, the slot extending along the length of such plate;

a resilient sealing member in the slot, the sealing member extending downwardly below the lower end of such plate to an end surface below the lower end of such plate, the end surface forming a portion of the seal; and

a first connection detachably holding the first and second plate members together, whereby the plate members can be separated for inserting the sealing member in the slot or removing the sealing member from the slot.

14. The pressure box of claim 13 comprising a second connection retaining the sealing member in the slot, the second connection comprising retaining members extending from one or both of the walls into the slot, the retaining members extending through holes in the sealing member to engage the sealing member and resist movement of the sealing member out of the slot; and

each retaining member is integral with the first or second plate member.

15. The pressure box of claim 14 wherein each plate member and the retaining members integral with such plate member is a homogeneous one-piece member.

16. A pressure box for thermoforming a heated sheet of thermoforming material against a mold, the pressure box comprising:

a top plate, side and end plates extending downwardly below the top plate, the top plate and the side and end plates defining a pressure chamber open at the bottom of the pressure box, and a resilient circumferential seal on the bottom of the pressure box, the seal extending around the pressure chamber to form a seal when the pressure box is pressed against a heated sheet for thermoforming the sheet;

at least one of the said plates comprising a pair of walls defining an essentially uniform width slot open at the lower end of such plate, the slot extending along the length of such plate; and

a sealing member in the slot, the sealing member extending downwardly below the lower end of such plate to an end surface below the lower end of such plate, the end surface forming a portion of the seal, the sealing member comprising a sheet strip of elastomeric material.

17. The pressure box of claim 16 wherein the elastomeric material comprises silicone rubber.

18. The pressure box of claim 16 wherein the end surface is disposed about 0.020 inches below the lower end of such plate.

19. The pressure box of claim 16 wherein the sealing member comprises a pair of flat, outer sides facing the walls of the slot

and the end surface is substantially perpendicular to the sides of the sealing member.

20. The pressure box of claim 16 wherein the end surface of the sealing member is a cut surface.

21. The pressure box of claim 20 wherein the end surface is a laser-cut surface.

22. The pressure box of claim 16 wherein at least a portion of the end surface of the sealing member has a three-dimensional shape to conform with a three-dimensional shape of a mold.